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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/625,993	07/26/2000	Kyoko Higashino	Q60072	8492

7590 04/18/2003

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EXAMINER

GONZALEZ, JULIO C

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 04/18/2003

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 26

Application Number: 09/625,993
Filing Date: July 26, 2000
Appellant(s): HIGASHINO ET AL.

Richard Turner
29,710
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 02/07/03.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

Appellant's brief includes a statement that claims 1-18 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) *Prior Art of Record*

5,592,731	Huang et al.	1-1997
6,194,800	Maruyama et al.	2-2001
5,834,873	Muller	11-1998
2,502,121	Beard	3-1950

(10) *Grounds of Rejection*

The following ground(s) of rejection are applicable to the appealed claims:

(a) Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al in view of Beard.

Huang et al discloses a stator core with a plurality of slots extending in axial direction (see figure 4b) and two sets of coils are fitted into slots (see figure 6) and the total of slots is 72 or more (see figure 9). Also, the stator core is formed as a lamination of a plurality of sheet-shaped magnetic members with a plurality of

teeth defining the slots and the stator been formed in annular shaped (see figures 4a-4c).

However, Huang et al does not disclose, explicitly that the stator core is made of two pieces fixed together.

On the other hand, Beard discloses for the purpose of providing an electrical machine with high reluctance path for armature reaction flux, stator laminations been made of a first end piece and second end piece (see figure 1), which are fixed together to complete the annular shape of the stator core.

(b) Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al and Beard as applied to claim 1 above, and further in view of Maruyama et al.

The combined alternator discloses all of the elements above. However, the combined alternator does not disclose that the center of air gaps of adjacent slot opening are not the same.

On the other hand, Maruyama et al discloses for the purpose of reducing eddy current losses, a stator with adjacent opening of center of air gaps of slot opening is not the same (see figures 41, 42, 44).

(c) Claims 9, 11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al in view of Beard and Muller.

Huang et al discloses a stator core with a plurality of slots extending in axial direction (see figure 4b) and two sets of coils are fitted into slots (see figure 6) and the total of slots is 72 or more (see figure 9). Also, the stator core is formed as a lamination of a plurality of sheet-shaped magnetic members with a plurality of teeth defining the slots and the stator been formed in annular shaped (see figures 4a-4c).

However, Huang et al does not disclose, explicitly that the stator core is made of two pieces fixed together.

On the other hand, Beard discloses for the purpose of providing an electrical machine with high reluctance path for armature reaction flux, stator laminations been made of a first end piece and second end piece (see figure 1), which are fixed together to complete the annular shape of the stator core.

However, neither Huang et al nor Beard disclose that the width of the teeth alternates in size.

On the other hand, Muller discloses for the purpose of facilitating the assembly of electrical machines, particularly, the insertion of windings in the stator slots, a stator wherein the width of the teeth alternate in size (see figure 2).

Allowable Subject Matter

(d) Claims 3-5, 10, 12-14 and 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

(11) Response to Argument

(a) Claim 1 discloses that the stator is made up on one piece. Also, the claim discloses that the stator is made up by having a first end and second end surface and fixing together the pieces to form an annular shape. From the claim 1 and also from figure 3 of the present invention, the stator is formed of a plurality of pieces, which are put together to form one single piece of stator. The disclosure of the present invention, DO NOT disclose that the stator is formed of only one single piece all together, but placing together several pieces (see claim 1). Huang et al and Beard disclose such limitation (see Huang et al, figure 5 & Beard, figure 1). Also, Huang teaches that windings 37 may be fitted into the slots of the stator (see fig 6 & column 7, lines 57-59, 62 of Huang et al). Claim 1 discloses that two sets are fitted in the slots of the stator, however, the claims do not specify what a set is. As known, a single three phase winding may be composed of a plurality of wires, thus each of the three phase winding 37 may be a set.

Claim 2 discloses that the slot opening of the stator is not the same. Maruyama et al clearly disclose a stator which has intervals in a circumferential direction wherein the slot opening portions are not the same (see figure 44, teeth 93a & figure 42, opening S1 and S2). Moreover, Maruyama et al discloses that the slot opening portions are alternated circumferentially (see figure 44).

Claim 9 discloses the widths of the teeth, which define the slots alternate in size.

Claim 9 does not define structurally where the width is located and from the claim, it may seem as if what is alternating in size is the width of the teeth. Muller clearly discloses a three phase electrical machine with a stator having teeth that define the slot and the size of the teeth alternate in size (see figures 1, 2 of Muller).

(b) In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Huang et al deals with stators of electric motors and generators (column

Art Unit: 2834

1, lines 9-11) and Beard deals directly related to stators of electric motors (see title). Also, Maruyama et al and Muller deal with the making of stators for electrical machines. Such knowledge and modifications are related and available in the same field of stators for electrical machines.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Jcg

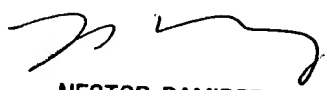
April 8, 2003

Conferees

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